

REMARKS

In view of the following remarks reconsideration of the present patent application is respectfully requested.

Claims 1-4 are in the application with claims 1-4 having been rejected under 35 USC § 103(a) for obviousness over U. S. Patent No. 4,002,999 (to Hesler et al.), in view of U. S. Patent No. 6,492,893 (to De Graaf) and further in view of US Re33,345 (to Sylvester, Jr. et al.).

Initially, the present invention is directed to the winding structure of an inductor used in a power factor correction circuit where the winding structure includes a ring-shaped core with a gap, first and second coils wound around the core, in a substantially over laid fashion, with the negative end of the first coil and the positive end of the second coil coupled to form a central tab. An adhesive is wrapped around the outer surface of the core (directly adhered on the coil wound around the core) so as to fix the coils.

Neither Hesler, De Graaf, Sylvester, Jr. or any combination of these references discloses or suggests the particular features of the invention.

In particular, Hesler et al. (the '999 patent) cannot be understood to disclose or suggest a gapped toroidal core and its first and second coils wound around the core wherein the negative end of a first coil and the positive end of a second coil are coupled to form a central tab. Rather, the '999 patent describes power transformer having primary, secondary and control windings associated with "double apertured linear magnetic core". The power transformer control windings are associated with both branches of the core such that one branch

may saturate before the other, and before complete core saturation, in order to reduce regenerative feed back in order to provide an advanced transistor turnoff, thereby allowing charged stored in a transistor switching device to dissipate prior to the end of each conduction.

Needless to say, the regenerative and degenerative branches of the Hesler et al. apparatus cannot be implemented with a gapped toroidal core as contemplated in the present invention. Indeed, as stated in column 5, lines 24-30, "for control purposes, two small apertures 30, 31 are introduced into the core, each aperture partitioning the core into two localized divisions or branches The primary and secondary power windings 12 encircle the full core cross section (11) and are normally remote from the two apertures with which the six control landings are associated". Additionally, U. S. Patent No. 3,914,680, to Hesler et al. discloses an un-gapped toroidal core with degenerative windings provided through an aperture 31 drilled though the core material.

Thus, Hesler et al. cannot be understood to disclose or suggest the gapped toroidal core of the invention with first and second coils wound around the core near the negative end of the first coil and the positive end of the second coil are coupled to form a central tap. Specifically, mere disclosure of a center-tapped structure is insufficient. What is required is that the first and second coils be wound around the core and the negative end of a first coil is coupled to the positive end of a second coil to form a central tap.

De Graaf does nothing to remedy the deficiencies of Hesler et al. in this regard. Given the particular structure of a regenerative and degenerative

branches in the Hesler et al. apparatus, De Graaf's toroidal magnetic core structure is not relevant. There is no provision in the De Graaf toroidal for implementing the Hesler et al. regenerative and degenerative branch magnetic circuits, making De Graaf an inappropriate reference for combination with Hesler et al.

Additionally, the '345 reissue patent to Sylvester, Jr. does nothing to remedy to deficiencies of Hesler et al. and De Graaf as references against the claims of the present invention. Sylvester, Jr. discloses secondary winding configurations useful in connection with toroidal transformers, but does not disclose or suggest a gapped toroidal core with first and second coils wound around the core, with the negative end of the first coil and the positive end of the second coil coupled to form a central tap.

Specifically, Sylvester, Jr. is relied upon as disclosing an adhesive wound around an outer surface of the core after the plurality of coils are wound around the core, where the tape is directly adhered on the first and second and coils wound around the core.

Applicant respectfully traverses this characterization of the Sylvester, Jr. et al. reference.

As described and shown in the '345 reissue patent, adhesive structures are provided in order to form electrically insulated multifilar strap linings which function to contain winding filaments in a substantially parallel and coplanar relationship. The Sylvester coils are not wound about a gapped toroidal core and then covered with an adhesive, but rather the coil wires are pre-

disposed onto adhesive layers that function to transform the coil wires into essentially a ribbon cable.

By way of contrast, in the present invention, the adhesive is directly adhered on the first and second coils after they have been wound around the core, so as to further fix the coils in position. As a further departure from the Sylvester reference, Sylvesters multifilar straps cause the adhesive to be wrapped around the entire core, i.e., the inner surface as well as well as the outer surface as well as being interleaved throughout the winding thickness. In the present invention, the adhesive is wrapped only around the outer surface of the completed core making the structural features and affects of the adhesive of the present invention substantially different from the multifilar straps of the Sylvester reference.

In view of the foregoing, applicant respectfully submits that the features of the invention as set forth in independent claim 1 and claims 2-4 which depend therefrom, contain subject matter patentable over any permissible combination of Hesler et al., De Graaf, and Sylvester, Jr. et al. Applicant respectfully requests reconsideration of claims 1-4 and earnestly solicits a Notice of Allowance of said claims and early passage to issue of the application.

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